

Notice of Allowability

Exr. Amdt.
R. Mack
3/31/05

Application No.

10/693,918

Examiner

Ricky L. Mack

Applicant(s)

WATANABE, MASANARI

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☒ The drawings filed on 28 October 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 0105
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 0305
7. ☒ Examiner's Amendment Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Ricky L Mack
Primary Examiner
Art Unit: 2873

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Charles Watts on 3/30/05.

The specification has been amended as described on pages 3-6 of this office action;
Claims 1-9, 11 and 12 have been amended as described on pages 7-11 of this office action; and

Claims 13-30 have been cancelled.

R. Mook
3/31/05

Election/Restrictions

2. Applicant's election without traverse of Group I claims 1-12, in the reply filed on 1/13/05 is acknowledged.
3. Claims 13-30 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/13/05.

Information Disclosure Statement

4. The examiner has considered the information disclosure statement (IDS) submitted on 1/13/05.

Amendments to the Specification

Please replace the paragraph [0095], with the following rewritten paragraph:

[0095] Referring to Fig. 14, on one side surface of each sheet shaped optical element 1 used in this example, there are formed plural prisms 131a, 131b, ~~tc, etc.~~ each sectional view of which is a triangle. The ridge (edge) 132a, 132b, ~~tc, etc.~~ corresponding to an apex of the triangle of each prism faces toward the opposite side to the sheet shaped substrate 130. That is to say, each prism faces toward the upper side of the drawing. The surface of the prism against the ridge (edge) is combined with the sheet shaped substrate 130 as one body. In this example, many prisms 131a, 131b, ~~tc, etc.~~ having a triangle shape in sectional view, are formed on the sheet shaped substrate 130, and are formed into a prism sheet.

Please replace the paragraph [0096], with the following rewritten paragraph:

[0096] The ridge (edge) 132a, 132b, ~~tc, etc.~~ of each prism runs parallel to one another. Each sheet shaped optical element 1 is supported in such a way that the base film 2 carries it. The surface on which the prisms 131a, 131b, ~~tc, etc.~~ are formed is located in the sheet shaped optical element package on the opposite side to the base film 2. That is, the surface on which prisms are formed is located on the upper side of Fig.2.

Please replace the paragraph [0097], with the following rewritten paragraph:

[0097] The detailed structure of the sheet shaped optical element 1 used in this example is as follows. The summit angle of the prism is 90°. The summit angle is an angle of the triangle in the sectional view corresponding to the ridge (edge) 132a, 132b, ~~tc, etc.~~ of prism 131a, 131b, ~~tc, etc.~~ The prism pitch is 50 μm . That is to say, twenty prisms are formed within one mm. A large number of prisms are formed in such a manner. The sheet shaped substrate 130 is made from transparent resin such as polyester resin. Each prism 131a, 131b, ~~tc, etc.~~ is made from resin having an excellent optical nature such as transparent acrylic resin. The prisms 131a, 131b, ~~tc, etc.~~ made from transparent resin are formed as one body on the shaped substrate 130 which is made from resin. Consequently, the sheet shaped optical element 1 in this example is formed.

Ridder
3/30/05

The thickness of the sheet shaped substrate 130 is approximately 120 μm , and the thickness of the sheet shaped substrate 130 containing prisms 131a, 131b, ~~tc, etc.~~ is 150 μm .

Please replace the paragraph [0098], with the following rewritten paragraph:

[0098] The sheet shaped optical element 1 is constructed in such a manner that the light from the back light source (from the direction of the shaped substrate 130) is, after refraction and reflection, collected mainly to the ridge (edge) 132a, 132b, ~~tc, etc.~~ of prism 131a, 131b, ~~tc, etc.~~ Consequently, the light is controlled and collected on the ridge (edge) 132a, 132b, ~~tc, etc.~~ of prism 131a, 131b, ~~tc, etc.~~ As a result, brightness on it is enhanced in the direction that is orthogonal to the ridge (edge), i.e. the Y direction in the drawing. In the distribution of light in the direction along the ridge of the triangular prism, i.e. the X direction in the drawing, the effect of the collection of light is rather weak.

Please replace the paragraph [0100], with the following rewritten paragraph:

[0100] As described later, there is a case in which two sheets of the sheet shaped optical element 1 are used in such a manner that the optical directions are orthogonal to each other, namely the ridges 132a, 132b, ~~tc, etc.~~ of prisms 131a, 131b, ~~tc, etc.~~ make a right angle to each other. By using such a manner, the ratio of advance of the brightness of the light is 2.0. That is, the brightness is doubled.

Please replace the paragraph [0101], with the following rewritten paragraph:

[0101] It is possible to adjust the angle of the field of view by using the sheet shaped optical element 1 with a specific optical direction. In this example, when the sheet shaped optical element 1 is used in such a manner that the direction of the ridges 132a, 132b, ~~tc, etc.~~ of prisms 131a, 131b, ~~tc, etc.~~ as mentioned above, is arranged along the up and down direction on the display, the angle of the field of view can be adjusted to $\pm 50^\circ$ in the horizon. In other words, within the view scope between 50° right or left from the normal position, from any direction, the display can be seen clearly.

*R. Mark
3/31/05*

Please replace the paragraph [0130], with the following rewritten paragraph:

[0130] Referring to Fig. 14, each sheet shaped optical element 1a and the sheet shaped optical element 1b used in this example is constructed as shown by sheet shaped optical element 1. Plural prisms 131a, 131b, ~~tc., etc.~~ each sectional view of which is a triangle, are formed on the one side (the upper side) of the sheet shaped substrate 130. The ridge (edge) 132a, 132b, ~~tc., etc.~~ corresponding to an apex of the triangle of each prism, faces the side opposite to the sheet shaped substrate 130. That is, it faces the upper side of the drawing. The surface of the prism against the ridge (edge) is combined with the sheet shaped substrate 130 as one body. In this example, many prisms 131a, 131b, ~~tc., etc.~~ the sectional view of each of which is a triangle shape, are formed on the sheet shaped substrate 130, and are formed into a prism sheet.

Please replace the paragraph [0131], with the following rewritten paragraph:

[0131] The ridge (edge) 132a, 132b, ~~tc., etc.~~ of each prism runs parallel to one another. The vertical lines illustrated on each sheet shaped optical element 1a and the sheet shaped optical element 1b in Fig.5 are ridge (edge) lines of the prisms. As shown in Fig.5, they are placed on the base film 2 in such a manner so that their optical directions are orthogonal to each other. The surface side on which the prisms 131a, 131b, ~~tc., etc.~~ are formed is located on an opposite side of the base film 2 in the sheet shaped optical element package. That is, the prism side is on the upper side (i.e. on the side of the paper face on which a drawing is illustrated).

Please replace the paragraph [0132], with the following rewritten paragraph:

[0132] The angle of the prism of this sheet shaped optical element, (i.e. the angle of the apex of the sectional view, a triangle, corresponding to ridge (edge) 132a, 132b, ~~tc., etc.~~ of prism 131a, 131b, ~~tc., etc.~~) is 90°. The prism pitch is 50 µm. Namely, twenty prisms 131a, 131b, ~~tc., etc.~~ are formed within one mm in width. A large number of prisms are formed in such a manner. The sheet shaped substrate 130 is made from transparent resin such as polyester resin. Each prism 131a, 131b, ~~tc., etc.~~ is made from resin that has an excellent optical nature such as transparent acrylic resin. The prisms 131a, 131b, ~~tc., etc.~~ made from transparent resin are

formed as one body on the sheet shaped substrate 130 made from resin and, as a consequence, the sheet shaped optical element 1 in this example is formed. The thickness of the sheet shaped substrate 130 is approximately 120 μm . The thickness of the sheet shaped substrate 130 containing prisms 131a, 131b, ~~tc, etc.~~ is 150 μm .

Please replace the paragraph [0133], with the following rewritten paragraph:

[0133] This sheet shaped optical element is constructed in such a manner that the light from the back light source (from the side of the shaped substrate 130) is, after refraction and reflection, collected mainly to the ridge (edge) 132a, 132b, ~~tc, etc.~~ of prism 131a, 131b, ~~tc, etc.~~ Consequently, the light is controlled and collected on the ridge (edge) 132a, 132b, ~~tc, etc.~~ of prism 131a, 131b, ~~tc, etc.~~ As a result, brightness on the ridge (edge) is enhanced. In the distribution of light in the direction along the ridge of the triangular prism (i.e., the X direction in the drawing), the effect of the collection of light is rather weak.

Please replace the paragraph [0135], with the following rewritten paragraph:

[0135] In this example, as shown in Fig 5, two sheets of the sheet shaped optical element are put on the base film in such a manner that the ridge (edge) 132a, 132b, ~~tc, etc.~~ of prism 131a, 131b, ~~tc, etc.~~ of the one sheet makes a right angle with the ridge (edge) 132a, 132b, ~~tc, etc.~~ of prism 131a, 131b, ~~tc, etc.~~ of the other sheet. As a result, it become easy to pile the two sheets of the sheet shaped optical element in such a manner that the ridges (edges) 132a, 132b, ~~tc, etc.~~ of prisms 131a, 131b, ~~tc, etc.~~ make a right angle.

Amendments to the Claims:

1. (Currently Amended) A sheet shaped optical element package comprising:
a base film, plural sheet shaped optical elements carried on said base film, and a cover film formed on said plural sheet shaped optical elements;
wherein:
said plural sheet shaped optical elements are arranged on said base film in a row;
each of said sheet shaped optical elements ~~have~~ has an optical direction; and
~~the above surface upper surfaces~~ of said plural sheet shaped optical elements are covered by said cover film in a manner such that said cover film covers said sheet shaped optical elements having such that said cover film has a blank part on it.

2. (Currently Amended) A sheet shaped optical element package according to claim 1, wherein:
each of said sheet shaped optical elements ~~has~~ includes a sheet shaped substrate and plural prisms, each of said prisms having a sectional view which is a triangle;
for each of said sheet shaped optical elements, the ridge corresponding to an apex of the triangle of each prism faces an opposite side to a away from said sheet shaped substrate, the prisms are combined with the sheet shaped substrate as one body, and the ridges of the prisms run parallel with each other;
~~the surface of the prism against the ridge is combined with the sheet shaped substrate as one body;~~
~~the ridge of each prism runs parallel with each other;~~
each sheet shaped optical element is supported by being carried by the base film; and
the surface of each sheet shaped optical element on which said plural prisms are formed is positioned on the ~~opposite(far)~~ opposite side of the respective sheet shaped substrate relative to said base film.



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3. (Currently amended) A sheet shaped optical element package comprising:
a base film, and plural sheet shaped optical elements carried on said base film;
wherein:
said plural sheet shaped optical elements are arranged on said base film in a row;
each of said sheet shaped optical elements ~~has~~ includes a sheet shaped substrate and
plural prisms, each of said prisms having a sectional view which is a triangle;
for each of said sheet shaped optical elements, the ridge corresponding to an apex of the
triangle of each prism faces an opposite side to a away from said sheet shaped substrate, the
prisms are combined with the sheet shaped substrate as one body, and the ridges of the prisms
run parallel with each other;
~~the surface of the prism against the ridge is combined with the sheet shaped substrate as~~
~~one body;~~
~~the ridge of each prism runs parallel with each other;~~
each sheet shaped optical element is supported by being carried by the base film; and
the surface of each sheet shaped optical element on which said plural prisms are formed
is positioned on the opposite side of the respective sheet shaped substrate relative to said base
film.
4. (Currently amended) A sheet shaped optical element package comprising:
a base film, plural sheet shaped optical elements carried on said base film, and a cover
film formed on said plural sheet shaped optical elements;
wherein:
said plural sheet shaped optical elements are arranged on said base film in a row;
said base film being tape shaped carries said sheet shaped optical elements having such
that said base film has a blank part on it;
each of said sheet shaped optical elements ~~have~~ has an optical direction;

~~the above surface upper surfaces~~ of said plural sheet shaped optical elements are covered by said cover film in a manner such that said cover film covers said sheet shaped optical elements ~~having such that said cover film has a blank part on it; and~~

~~said cover film and said base film hold said plural sheet shaped optical elements are held between them said cover film and said base film.~~

5. (Currently amended) A sheet shaped optical element package according to claim 4, wherein:

each of said sheet shaped optical elements ~~has~~ includes a sheet shaped substrate and plural prisms, each of said prisms having a sectional view which is a triangle;

for each of said sheet shaped optical elements, the ridge corresponding to an apex of the triangle of each prism faces an opposite side to a away from said sheet shaped substrate, the prisms are combined with the sheet shaped substrate as one body, and the ridges of the prisms run parallel with each other;

~~the surface of the prism against the ridge is combined with the sheet shaped substrate as one body;~~

~~the ridge of each prism runs parallel with each other;~~

each sheet shaped optical element is supported by being carried by said base film; and

the surface of each sheet shaped optical element on which said plural prisms are formed is positioned on the ~~opposite(far)~~ opposite side of the respective sheet shaped substrate relative to said base film.

6. (Currently amended) A sheet shaped optical element package according to claim 4, wherein:

said base film is equal in size to said cover film; and

~~said base film and said cover film hold said plural sheet shaped optical elements are held between them said base film and said cover film~~ in a sandwich structure.

7. (Currently amended) A sheet shaped optical element package comprising:
a base film, plural sheet shaped optical elements carried on said base film, and a cover film supplied on said plural sheet shaped optical elements; and
an upper roller to roll up said cover film and a lower roller to ~~roll~~ toll up said cover film;
wherein:
said plural sheet shaped optical elements are arranged on said base film in a row;
~~said base film and said cover film hold~~ said sheet shaped optical elements are held
~~between them~~ said base film and said cover film; and
by rolling up by said upper and lower rollers, said sheet shaped optical elements can be picked out.
8. (Currently amended) A sheet shaped optical element package according to claim 7,
wherein:
~~the above surface upper surfaces~~ of said plural sheet shaped optical elements in a row are covered by said cover film in a manner such that said cover film covers ~~the~~ said sheet shaped optical elements ~~having such that said cover film has~~ a blank part on it; and
~~said cover film and said base film hold~~ said plural sheet shaped optical elements are held
~~between them~~ said cover film and said base film.
9. (Currently amended) A sheet shaped optical element package according to claim 7,
wherein:
said base film is equal in size to said cover film; and
~~said base film and said cover film hold~~ said plural sheet shaped optical elements are held
~~between them~~ said base film and said cover film in a sandwich structure.
10. (Original) A sheet shaped optical element package according to claim 7, wherein each of said sheet shaped optical elements has an optical direction.

11. (Currently amended) A sheet shaped optical element package according to claim 7, wherein:

each of said sheet shaped optical elements ~~has includes~~ a sheet shaped substrate and plural prisms, each of said prisms having a sectional view which is a triangle;

for each of said sheet shaped optical elements, the ridge corresponding to an apex of the triangle of each prism faces an opposite side to a away from said sheet shaped substrate, the prisms are combined with the sheet shaped substrate as one body, and the ridges of the prisms run parallel with each other;

~~the surface of the prism against the ridge is combined with the sheet shaped substrate as one body;~~

~~the ridge of each prism runs parallel with each other;~~

each sheet shaped optical element is supported by being carried by the base film; and

the surface of each sheet shaped optical element on which said plural prisms are formed is positioned on the opposite side of the respective sheet shaped substrate relative to said base film.

12. (Currently amended) A sheet shaped optical element package according to claim 7, wherein:

said structure in which said plural sheet shaped optical elements are arranged on said base film in a row, ~~and row and are held between~~ said base film and said cover film ~~which hold said sheet shaped optical elements between them,~~ is rolled up to form a reel shape, or said structure is folded to form a Z shape ~~in a unit of each sheet shaped optical element.~~

Reasons for Allowance

6. The following is an examiner's statement of reasons for allowance: The prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claim(s), in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

The prior art fails to teach a combination of all the claimed features as presented in claim(s) 1, 2 and 4-6 wherein a sheet shaped optical element comprises a base film, plural sheet shaped optical elements carried on the base film and arranged in a row, and a cover film formed on the plural sheet shaped optical elements and the cover film having a blank part, as claimed;

The prior art fails to teach a combination of all the claimed features as presented in claim(s) 3, wherein a sheet shaped optical element comprises a base film, plural sheet shaped optical elements carried on the base film and arranged in a row, and each of the sheet shaped optical elements includes a sheet shaped substrate and plural prisms, each of said prism having a section view which is triangle, as claimed; and

The prior art fails to teach a combination of all the claimed features as presented in claim(s) 7-12 wherein a sheet shaped optical element comprises a base film, plural sheet shaped optical elements carried on the base film and arranged in a row, and a cover film formed on the plural sheet shaped optical elements, an upper roller and a lower roller and wherein by rolling up by said upper and lower rollers, said sheet shaped optical elements can be picked out, as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ushijima (4400252) are cited for disclosing a device a panel (sheet) is enclosed between two sheets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ricky L. Mack whose telephone number is (571) 272-2333. The examiner can normally be reached on Monday-Friday (6:30 AM to 4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ricky L Mack
Primary Examiner
Art Unit 2873

RM
March 31, 2005